AMENDMENTS TO THE SPECIFICATION

Please substitute the following paragraphs in the specification for corresponding paragraphs previously presented. The changes to the following paragraphs is indicated in the following.

Please amend the paragraph beginning at page 1, line 15, as follows:

[0004] U.S. Patent ~~Application Serial No. 09/854,933~~ 6,570,292, entitled "High Temperature Super-Conducting Rotor Coil Support With Split Coil Housing And Assembly Method", filed May 15, 2001 ~~(atty. dkt. 839-1006)~~;

Please amend the paragraph beginning at page 1, line 20, as follows:

[0005] U.S. Patent ~~Application Serial No. 09/854,931~~ 6,412,289, entitled "Synchronous Machine Having Cryogenic Gas Transfer Coupling To Rotor With Super-Conducting Coils", filed May 15, 2001 ~~(atty. dkt. 839-1007)~~;

Please amend the paragraph beginning at page 1, line 25, as follows:

[0006] U.S. Patent ~~Application Serial No. 09/854,946~~ 6,605,885, entitled "High Temperature Super-Conducting Rotor Coil Support With Tension Rods And Bolts And Assembly Method", filed May 15, 2001 ~~(atty. dkt. 839-1009)~~;

Please amend the paragraph beginning at page 2, line 8, as follows:

[0008] U.S. Patent ~~Application Serial No. 09/854,938~~6,590,304 entitled "High Temperature Super-Conducting Synchronous Rotor Having An Electromagnetic Shield And Method For Assembly", filed May 15, 2001 ~~(atty. dkt. 839-1011)~~;

Please amend the paragraph beginning at page 2, line 13, as follows:

[0009] U.S. Patent ~~Application Serial No. 09/854,940~~ 6,590,305, entitled "High Temperature Super-Conducting Rotor Coil Support And Coil Support Method", filed May 15, 2001 ~~(atty. dkt. 839-1012)~~;

Please amend the paragraph beginning at page 2, line 17, as follows:

[0010] U.S. Patent ~~Application Serial No. 09/854,937~~ 6,608,409 entitled "High Temperature Super-Conducting Rotor Having A Vacuum Vessel And Electromagnetic Shield And Method For Assembly", filed May 15, 2001 ~~(atty. dkt. 839-1016)~~;

Please amend the paragraph beginning at page 2, line 22, as follows:

[0011] U.S. Patent ~~Application Serial No. 09/854,944~~ 6,590,308, entitled "A High Power Density Super-Conducting Electric Machine" filed May 15, 2001 ~~(atty. dkt. 839-1019)~~;

Please amend the paragraph beginning at page 2, line 26, as follows:

[0012] U.S. Patent ~~Application Serial No. 09/854,943~~ 6,553,773, entitled "Cryogenic Cooling System For Rotor Having A High Temperature Super-Conducting Field Winding", filed May 15, 2001 ~~(atty. dkt. 839-1062)~~;

Please amend the paragraph beginning at page 3, line 7, as follows:

[0014] U.S. Patent ~~Application Serial No. 09/855,034~~ 6,577,028, entitled "High Temperature Super Conducting Rotor Power Leads", filed May 15, 2001 ~~(atty. dkt. 839-1064)~~.

AMENDMENTS TO THE CLAIMS

Please substitute the following complete set of claim(s), without cancelled claims and with new amendments indicated, for the prior claim set:

1. (Currently Amended) In a synchronous machine, a rotor comprising:

a rotor core;

a super-conducting coil winding extending around at least a portion of the rotor core, said coil winding having a pair of side sections on opposite sides of said rotor core, and wherein said side sections are radially outward and separated from the rotor core by a gap;

at least one tension rod extending between the pair of side sections of the coil winding and through said rotor, wherein a first end of the tension rod is proximate a first side section of the coil winding and a second end of the tension rod is proximate an opposite side section of the coil winding, and wherein the tension rod is separated by a vacuum region from the rotor core;

a coil housing at each of opposite ends of said tension rod, wherein said housing wraps around said coil winding and is attached to said tension rod and ~~said housing is~~ wherein the coil winding, at least one tension rod and coil housing are thermally isolated from the rotor core.

2. (Original) In a rotor as in claim 1 wherein said coil housing is a U-shaped channel.

3. (Original) In a rotor as in claim 1 wherein the rotor core is in an internal vacuum.

4. (Original) In a rotor as in claim 1 further comprising a cryogenic coupling providing cooling fluid to said coil winding, wherein said housing and tension rod are cooled by conduction from said coil winding.

5. (Original) In a rotor as in claim 1 further comprising a dowel coupling the housing to the tension rod.

6. (Original) In a rotor as in claim 1 further comprising a hollow pin coupling the housing to the tension rod.

7. (Previously Presented) In a rotor as in claim 1 further comprising a dowel coupling the housing to the tension rod, wherein said dowel extends through an aperture in an end of the tension rod and through apertures in side flanges on the coil housing.

8. (Original) In a rotor as in claim 1 further comprising a pin coupling the housing to the tension rod, wherein said pin extends through an aperture in an end of the tension rod and through the coil housing, and a locking-nut securing the pin to the housing.

9. (Original) In a rotor as in claim 1 further comprising a hollow pin formed of a high strength material selected from a group of metals consisting of Inconel and titanium alloys.

10. (Original) In a rotor as in claim 1 wherein said housing is formed of a metal material selected from a group consisting of aluminum, Inconel, and titanium alloys.

11. (Original) In a rotor as in claim 1 wherein said tension rod is formed of a high-strength and non-metallic metal alloy.

12. (Original) In a rotor as in claim 1 wherein said tension rod is formed of an Inconel metal alloy.

13. (Original) In a rotor as in claim 1 wherein said tension rod extends through a longitudinal axis of the rotor.

14. (Original) In a rotor as in claim 1 wherein said tension rod extends through conduits in said rotor core.

15. (Original) In a rotor as in claim 14 wherein said tension rod is spaced from rotor walls of the conduits.

16. (Allowed) A method for supporting a super-conducting coil winding on a rotor core of a synchronous machine comprising:

a. extending a tension bar through a conduit in said rotor core, such that a first end of the tension bar is proximate one side of the coil winding and a second end of the tension bar is proximate an opposite side of the coil winding and wherein a vacuum cylindrical region between the tension bar and conduit thermally isolate the bar from the core;

b. inserting a housing over a portion of the coil, wherein the housing and coil are thermally isolated from the rotor core by a vacuum gap between the rotor core and the housing and coil;

c. attaching an end of the tension bar to the housing.

17. (Allowed) A method as in claim 16 further comprising inserting a second housing over a second portion of the coil and attaching the second housing to a second end of the tension bar.

18. (Allowed) A method as in claim 16 further comprising inserting a second housing over a second portion of the coil an attaching the second housing to a second end of the tension bar, wherein said tension bar extends through a rotational axis of the rotor core, and the first portion and second portion of the coil are on opposite sides of the rotor.

19. (Allowed) A method as in claim 16 further comprising attaching the end of the tension bar to the housing by inserting a dowel pin through apertures in the end of the tension bar and housing.

20. (Allowed) A method as in claim 16 further comprising cryogenically cooling the coil, and cooling said housing and tension rod by heat transfer between the coil and the housing and tension rod.

21. (Allowed) A rotor for a synchronous machine comprising:

a rotor core having a conduit orthogonal to a longitudinal axis of the rotor;

a racetrack super-conducting (SC) coil winding in a planar racetrack shape parallel to the longitudinal axis of the rotor;

a tension rod inside the conduit of the core, said tension rod having a first end proximate to one side of the coil winding and an opposite end proximate to an opposite side of the coil winding, and wherein the tension rod is separated from the conduit by a cylindrical vacuum region; and

a housing coupling the coil winding to the ends of the tension rod, wherein the housing, coil winding and tension rod are thermally isolated from the rotor core.

22. (Allowed) A rotor as in claim 21 further comprising clamps at opposite ends of the coil.

23. (Allowed) A rotor as in claim 21 further comprising a plurality of conduits orthogonal to the longitudinal axis of the rotor core and in a plane defined by the SC coil.

24. (Allowed) A rotor as in claim 21 wherein the tension rod has a flat end abutting the coil.

25. (Allowed) A rotor as in claim 21 further comprising a dowel for securing the housing to the tension rod.

26. (Allowed) A rotor as in claim 25 wherein the dowel is hollow.

27. (Allowed) A rotor as in claim 21 further comprising an insulating tube sleeve between the rotor core and the tension rod.

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested. The allowance of claims 16 to 27 and indication of allowability of claims 1-15 is appreciated.

Claim 1 has been amended as suggested in the Action. In particular, the rejection of claims 1 to 15 as being indefinite has been overcome by deletion of the extraneous phrase "said housing is" in line 13 of claim 1.

Applicants do not claim a priority date of any of the related applications listed in the specification. These applications were filed contemporaneously with this application. The references to these applications have been updated by this amendment.

All claims are in good condition for allowance. If any small matter remains outstanding, the Examiner is requested to telephone applicants' attorney. Prompt reconsideration and allowance of this application is requested.

Respectfully submitted,

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